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(71) Applicants

**Digby Atkin**

**199 Bramble Lane, Chilwell, Nottingham, NG9 4EU**

(72) Inventor

**Digby Atkin**

(74) Agent and/or Address for Service

**Eric Potter & Clarkson**

**14 Oxford Street, Nottingham, NG1 6BP**

(51) INT CL'

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(68) Field of search

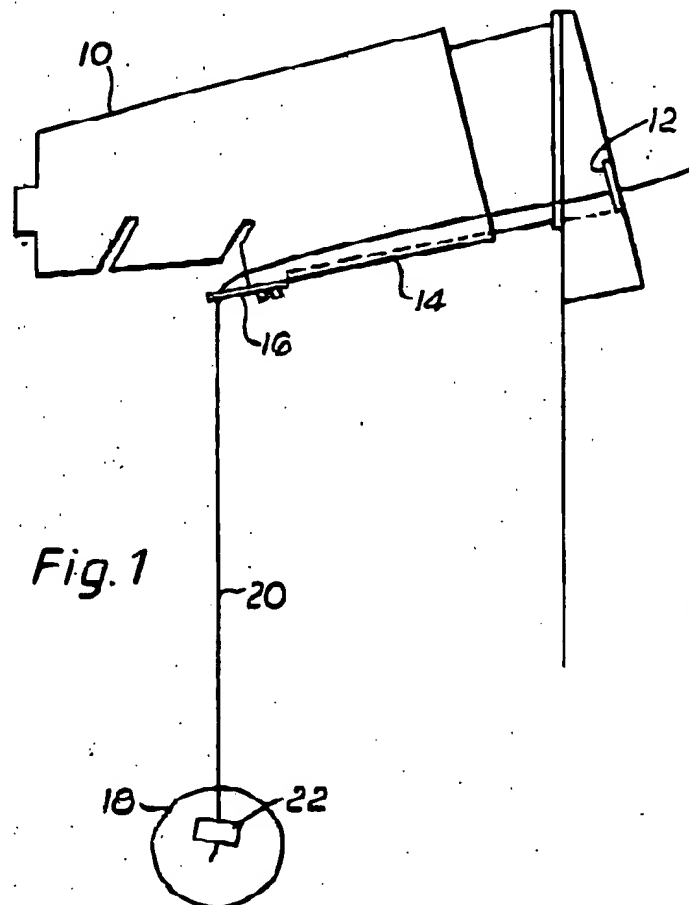
**G4V**

**Selected US specifications from IPC sub-classes**

**GOTO G07F**

(54) **Devices for use in preventing the misuse of coin acceptor mechanisms**

(57) A device for use in preventing the misuse of coin acceptor mechanisms by a technique involving feeding an elongate element (20) into the coin acceptor mechanism. The device comprises restriction means (16, 16', 42) adapted to permit a coin (18) and/or the elongate element (20) to move through the coin acceptor mechanism in a forward direction and adapted to substantially prevent the elongate element (20) from being moved through the mechanism in the reverse direction.



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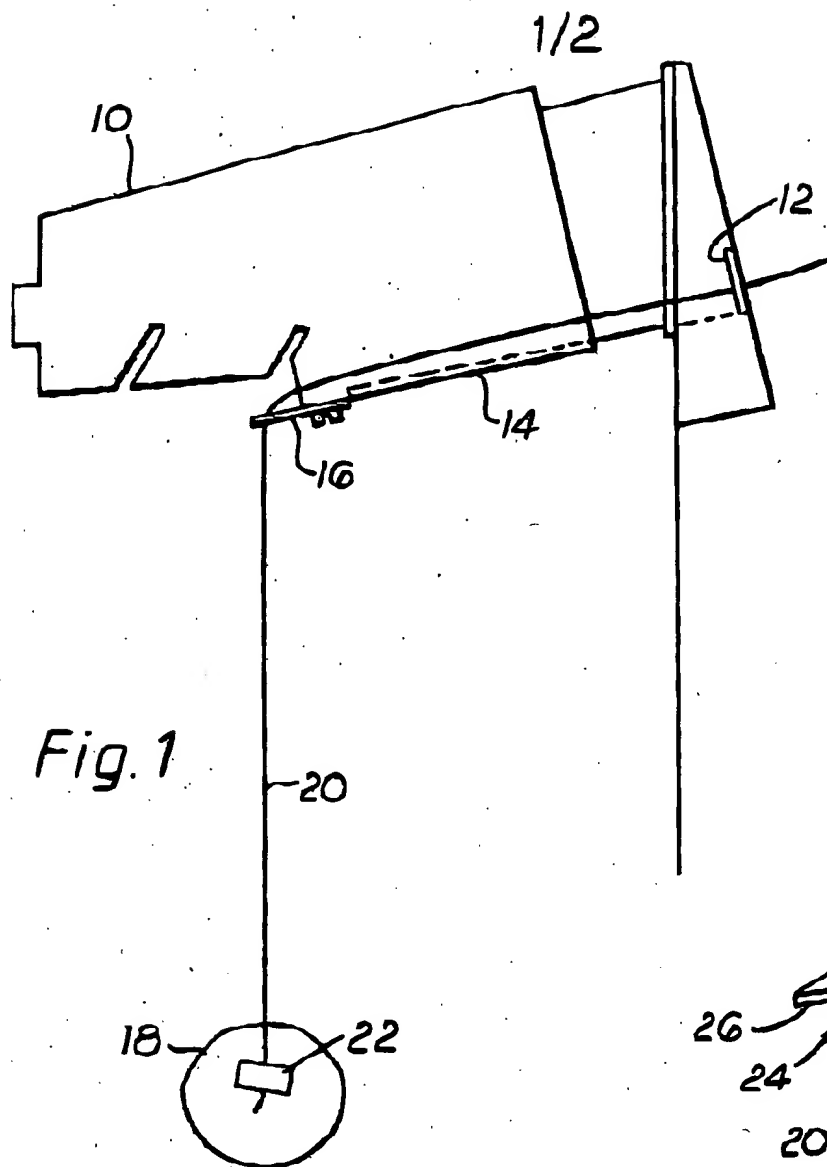


Fig. 1

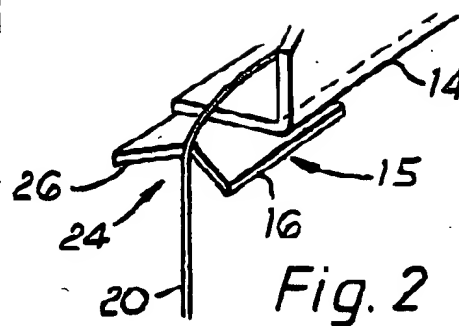


Fig. 2

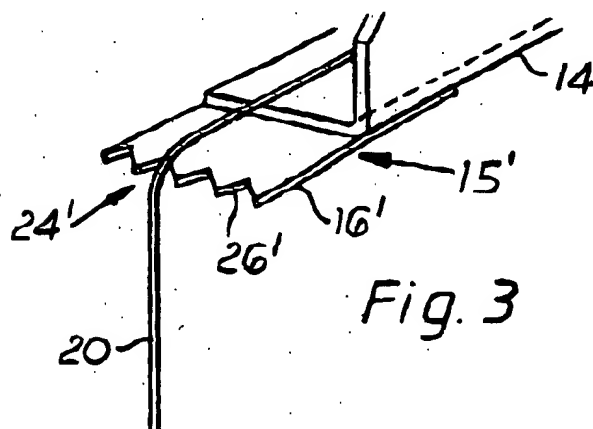


Fig. 3

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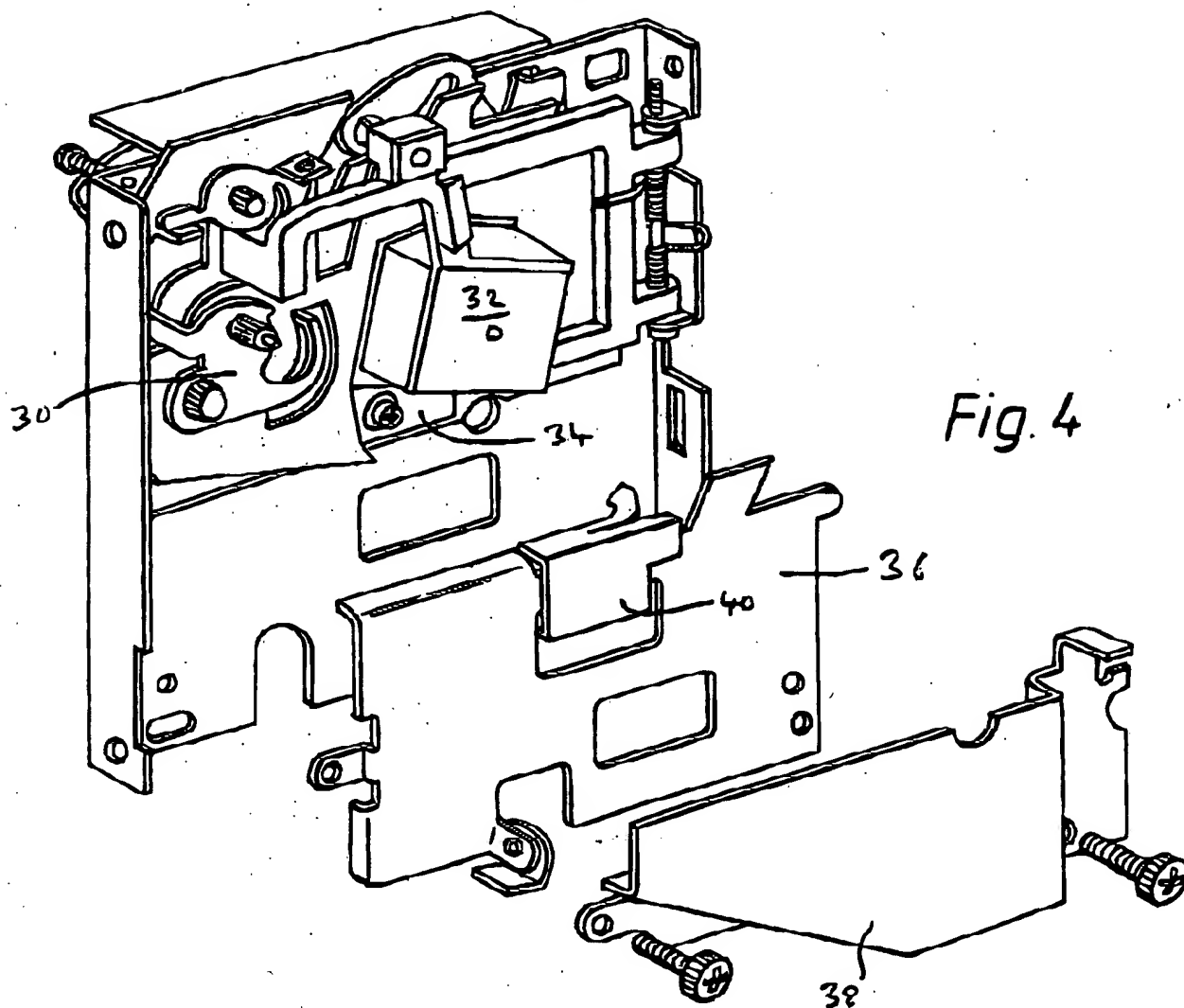
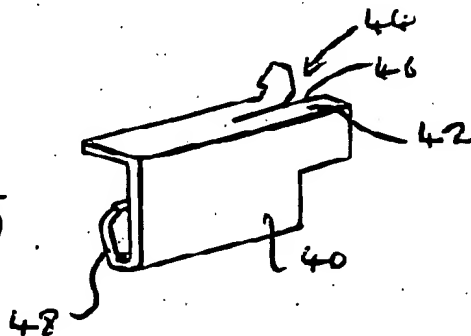


Fig. 4

Fig. 5



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DEVICE FOR USE IN PREVENTING THE MISUSE OF COIN ACCEPTOR  
MECHANISMS

This invention relates to a device for use in preventing the misuse of coin acceptor mechanisms.

Coin acceptor mechanisms comprise any form of mechanism which accepts coins or tokens in order to make  
5 some form of purchase from a machine.

In some cases the machine is a vending machine which sells goods such as drinks or food. In other cases the machine may be an amusement machine such as a fruit machine.

10 When a coin is accepted by the coin acceptor mechanism the user acquires credits which enable him to use the machine. Often the coin activates a microswitch in the mechanism; each time the microswitch is activated the number of credits accrued to the user is increased.

15 In a vending machine the credits would be used to purchase goods, and in an amusement machine the credits would be used to purchase a certain number of games.

It is possible, by illegal means, to increase the number of credits without putting the appropriate number  
20 of coins or tokens into the coin acceptor mechanism.

One way of doing this is known as "fishing". In order to do this one end of an elongate element, such as a piece of string, is attached to the coin or token, for example by adhesive or adhesive tape. The coin is then  
25 dropped into the coin acceptor mechanism while holding on to the other end of the string. The string can be used to stop the coin when it is in the region of the microswitch. Provided that the coin is stopped in the correct position the string and coin can be drawn back through  
30 the mechanism by a short distance and then dropped back down in order to activate the microswitch again. This process can be repeated over and over again to build up hundreds of credits. It will be appreciated that with

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gambling machines this technique could be used to acquire illegally a considerable amount of money.

Another illegal technique is known as "strimming". In order to do this all that is required is a flexible  
5 elongate element which has a certain degree of rigidity; the plastics extrusion used in lawn trimmers is suitable. The elongate element is manipulated through the coin acceptor mechanism whilst retaining hold of one end. The other end of the elongate element is used to activate  
10 the microswitch in order to build up credits. This technique does not require the use of any coin or token, and leaves no trace whatsoever.

Both fishing and strimming are well known to the manufacturers of vending and amusement machines, and have  
15 caused a substantial loss of money over a period of several years.

It is an object of the present invention to provide a device for use in preventing the misuse of coin acceptor mechanisms by techniques such as fishing and  
20 strimming.

According to one aspect of the present invention there is provided a device for use in preventing the misuse of coin acceptor mechanisms by a technique involving feeding an elongate element into the coin  
25 acceptor mechanism, said device comprising restriction means adapted to permit a coin and/or the elongate element to move through the coin acceptor mechanism in a forward direction and adapted to substantially prevent the elongate element from being moved through the  
30 mechanism in the reverse direction.

The elongate element may have the coin attached thereto, as in fishing, or may have no coin attached, as in strimming.

Advantageously the restriction means is adapted to  
35 increase the force preventing movement in the reverse

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direction with increased force applied on the elongate element in the reverse direction.

Advantageously also, the restriction means includes severing means adapted to sever the elongate element when it is moved in the reverse direction. When this happens, if a coin is attached to the elongate element, the coin simply drops through the coin acceptor mechanism and gives the user a single credit.

Preferably the restriction means is adapted to exert a drag force on the elongate element when it moves through the mechanism in the forward direction with a coin attached. The drag force can be sufficient to prevent the coin achieving a large enough speed to be accepted by the mechanism; in this case the coin is simply rejected.

Desirably the restriction means comprises a gripping member which is adapted to exert a gripping force, preferably through friction, on the elongate element when it moves in the reverse direction. One way of achieving this is to provide the gripping member with at least one substantially V-shaped formation. The formation can be arranged so that when the elongate member is moved in the reverse direction the element is drawn into the corner of the V-shape so that the friction between the gripping member and the elongate element prevents it from being moved further in the reverse direction.

Desirably the severing means comprises a cutting edge provided on the gripping member preferably in the or each V-shaped formation in order to sever the elongate element when it is moved in the reverse direction.

The elongate element may be, for example, a length of cord, wire, or string, including a plastics extrusion.

Securing means can be provided to secure the device to the coin acceptor mechanism. The securing means may be integral with the device.

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According to another aspect of the invention there is provided a device for use in preventing fishing with a coin having an elongate element attached thereto, said device comprising restriction means adapted to exert a  
5 drag force on the elongate element as it passes in a forward direction through the mechanism in order to slow down the coin, whereby the coin is rejected by the coin acceptor mechanism.

The device according to this aspect of the invention  
10 may additionally be provided with any combination of the features of the device according to the first aspect of the invention.

According to a further aspect of the invention there is provided a coin acceptor mechanism comprising a body  
15 defining a coin travel path therethrough and having a device as described above disposed therein.

In one embodiment the body includes an inlet chute, and the device is disposed in the coin travel path in the region of the inlet chute.

20 In another embodiment the body includes an inner plate, and the device is disposed in the coin travel path on the inner plate.

In this embodiment the body may include a coin cradle, and the device can be disposed in the coin  
25 travel path below the coin cradle.

Also in this embodiment the coin acceptor mechanism may include a magnet and the device can be disposed in the coin travel path below the magnet.

Reference is now made to the accompanying drawings,  
30 in which:-

Figure 1 is a cross-sectional view of part of a coin acceptor mechanism incorporating a device according to the invention;

Figure 2 is a perspective view of one embodiment of  
35 a device according to the invention;

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Figure 3 is a perspective view of a second embodiment of a device according to the invention;

Figure 4 is an exploded perspective view of part of a coin acceptor mechanism with another embodiment of a device according to the invention disposed in a different position to the position shown in Figure 1; and

Figure 5 is a perspective view of the device according to the invention shown in Figure 4.

A coin acceptor chute of a mechanical coin acceptor mechanism is designated 10 in Figure 1. The chute 10 includes a coin acceptor slot 12 through which a coin 18 can be inserted into the chute 10.

The chute 10 is provided with a base plate 14 to which a device 15 having restriction means in the form of a gripping member 16 is secured. The device 15 is for substantially preventing the illegal misuse of the coin acceptor mechanism by techniques such as fishing and strimming.

In order to perform fishing the coin 18 is secured to one end of an elongate element in the form of a length of string 20 by means of adhesive tape 22. The coin 18 is pushed through the slot 12 and passes through the chute 10 of the coin acceptor mechanism. The user holds onto the other end of the string 20, and stops the movement of the coin 18 at the right position to be able to perform fishing. When the device 15 is not provided the coin 18 can be repeatedly lifted up and down by a few millimeters in order to increase the number of credits accrued to the user.

Figure 2 shows one embodiment of device 15 which is provided with a single V-shaped formation 24. The restriction means also includes severing means which comprises a cutting edge 26 provided on the gripping member 16 in the formation 24.

Figure 3 shows a second embodiment of device 15' in which the restriction means includes a gripping member

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16' which is provided with a plurality of V-shaped formations 24'. The restriction means also includes severing means which comprises a cutting edge 26' provided on the gripping member 16' in each formation 24'.

When the coin 18 is inserted into the chute 10 the downward momentum of the coin 18 enables it to drag the string 20 behind it. However, the gripping member 16 or 16' exerts a drag force on the coin 18; if the coin 18 does not reach a certain speed then the coin acceptor mechanism will reject the coin 18. Usually the gripping member 16 or 16' will slow down the coin 18 sufficiently to cause it to be rejected.

If the coin 18 is not rejected, the gripping member 16 or 16' will still prevent fishing. When the string 20 is moved in the reverse direction it will move into the corner of the V-shaped formation 24 or 24'; the weight of the coin, together with the substantially 90° angle through which the string 20 is bent will cause a sufficient friction force between the string 20 and the gripping member 24 or 24' to prevent movement in the reverse direction. Furthermore the cutting edge 26 or 26' will sever the string 20 so that the coin 18 drops through the coin acceptor mechanism and gives the user a single credit.

Figure 4 shows a part of the mechanical coin acceptor mechanism which is below the part shown in Figure 1.

The part of the coin acceptor mechanism shown in Figure 4 includes a coin cradle 30, a magnet 32, a runner plate 34, an inner plate 36 and a reject plate 38. These features are all conventional and will not be described further.

A device 40 is attached to the inner plate 36. The device 40 includes restriction means having a gripping member 42 with a single V-shaped formation 44. The

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restriction means also includes severing means in the form of a cutting edge 46 provided on the gripping member 42 in the formation 44.

5 The device 40 also includes securing means in the form of a substantially U-shaped channel 48 for securing the device 40 to the inner plate 36.

10 The device 40 positioned on the inner plate 36 of the coin acceptor mechanism can prevent fishing and strimming. However, this positioning is more effective in preventing strimming than the positioning shown in Figure 1, because it is much more difficult to prevent the elongate element used in strimming from being caught in the formation 44.

15 It will be appreciated that the coin 18 may be any form of coin or token.

20 The gripping member is preferably made of metal or plastic. The dimensions of the V-shaped formation 24, 24' or 44 can be selected to grip the range of thicknesses of elongate element which is normally used in fishing and strimming.

The device according to the invention may be manufactured as an integral part of the coin acceptor mechanism, or may be fitted separately.

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CLAIMS

1. A device for use in preventing the misuse of coin acceptor mechanisms by a technique involving feeding an elongate element into the coin acceptor mechanism, said device comprising restriction means adapted to permit a  
5 coin and/or the elongate element to move through the coin acceptor mechanism in a forward direction and adapted to substantially prevent the elongate element from being moved through the mechanism in the reverse direction.
2. A device according to Claim 1, wherein the  
10 restriction means is adapted to increase the force preventing movement in the reverse direction with increased force applied on the elongate element in the reverse direction.
3. A device according to Claim 1 or 2, wherein the  
15 restriction means includes severing means adapted to sever the elongate element when it is moved in the reverse direction.
4. A device according to Claim 1, 2 or 3, wherein the  
20 restriction means is adapted to exert a drag force on the elongate element when it moves through the coin acceptor mechanism with a coin attached in the forward direction, whereby the coin speed attained by the coin in the mechanism is not sufficient to enable the coin to be  
25 accepted by the mechanism, so that the coin is rejected by the coin acceptor mechanism.
5. A device according to any preceding claim, wherein the restriction means comprises a gripping member which is adapted to exert a gripping force on the elongate element when it moves in the reverse direction.
6. A device according to Claim 5, wherein the gripping  
30 force is frictional.
7. A device according to Claim 5 or 6, wherein the gripping member includes at least one substantially V-shaped formation.
8. A device according to Claim 7, when dependent upon  
35 claim 3, wherein the severing means comprises a cutting

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edge provided in the or each V-shaped formation.

9. A coin acceptor mechanism comprising a body defining a coin travel path therethrough and having a device according to any preceding claim disposed therein.

5 10. A coin acceptor mechanism according to Claim 9, wherein the body includes an inlet chute, and the device is disposed in the coin travel path in the region of the inlet chute.

11. A coin acceptor mechanism according to Claim 9,  
10 wherein the body includes an inner plate, and the device is disposed in the coin travel path on the inner plate.

12. A coin acceptor mechanism according to Claim 9 or 11, wherein the body includes a coin cradle, and the device is disposed in the coin travel path below the coin  
15 cradle.

13. A coin acceptor mechanism according to Claim 9, 11 or 12, wherein the coin acceptor mechanism includes a magnet and the device is disposed in the coin travel path below the magnet.

20 14. A device for use in preventing the misuse of coin acceptor mechanisms substantially as herein described with reference to and as shown in the accompanying drawings.

15. A coin acceptor mechanism substantially as herein  
25 described with reference to and as shown in the accompanying drawings.

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**Amendments to the claims  
have been filed as follows**

edge provided in the or each V-shaped formation.

9. A coin acceptor mechanism comprising a body defining a coin travel path therethrough and having a device according to any preceding claim disposed therein.

10. A coin acceptor mechanism according to Claim 9, wherein the body includes an inlet chute, and the device is disposed in the coin travel path in the region of the inlet chute.

11. A coin acceptor mechanism according to Claim 9, wherein the body includes an inner plate, and the device is disposed in the coin travel path on the inner plate.

12. A coin acceptor mechanism according to Claim 9 or 11, wherein the body includes a coin cradle, and the device is disposed in the coin travel path below the coin cradle.

13. A coin acceptor mechanism according to Claim 9, 11 or 12, wherein the coin acceptor mechanism includes a magnet and the device is disposed in the coin travel path below the magnet.

14. A device for use in preventing the misuse of coin acceptor mechanisms substantially as herein described with reference to and as shown in the accompanying drawings.

15. A coin acceptor mechanism substantially as herein described with reference to and as shown in the accompanying drawings.

16. A device according to any of Claims 1 to 8, wherein the restriction means comprises a substantially flat plate having a portion thereof extending at an angle to the plate to define a V-shaped gripping formation between said portion and the rest of the plate.

17. A device according to any of Claims 1 to 8 and 16, wherein said device can be secured to a part of the coin acceptor mechanism which lies in the coin travel path.

18. A device according to any of Claims 1 to 8, 16 and

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17, wherein said device can be secured to the coin acceptor mechanism to be substantially immovable relative thereto.

19. A device according to any of Claims 1 to 8 and 16 to 18, wherein the device, in use, is secured to a non-movable part of the coin acceptor mechanism.